

Farmers and Herders Crises in Nigeria: Implication to Food Security in Southeast Nigeria

Okonkwo, Ebelechukwu Rebecca Ph.D; Edokobi, Tonna David Ph.D; Abba, Ugochukwu Evaristus

Department of Public Administration, Nnamdi Azikiwe University (NAU), Awka, Nigeria

ABSTRACT

This study has investigated farmers and herders crises in Nigeria: implication to food security in South East Nigeria (2015-2020) using descriptive and inferential statistics on a sample of 348 respondents. The data collected were analyzed using frequency, percentages, mean, standard deviation and regression technique of the Ordinary Least Square (OLS). Results have shown that open cattle grazing have significant effect on food security in South East Nigeria, but it has an inverse relationship with food security in South East Nigeria which implies that the Open cattle grazing and food security in South East Nigeria move in opposite direction. Cattle rustling have significant effect on food security in South East Nigeria and it has an inverse relationship with food security in South East Nigeria. Damage of farm products by cattle has significant effect on food security in South East Nigeria and it has a negative positive relationship with food security in South East Nigeria. Land and water use by cattle has significant effect on food security in South East Nigeria and it also have an inverse relationship with food security in South East Nigeria. Based on the findings of this study, the following recommendations are made: The government should introduce cattle ranching as a way of discouraging cattle rearing in the region. Open grazing should be discouraged by the government. This will help reduce the rate crop destruction in the country. The government should come up effective ban on open grazing to put a lasting solution to farmer and herders crisis in the country. The government should insure rural farmers to protect them from credit affecting their ability to repay their loan.

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KEYWORDS: Food Security, open cattle grazing, cattle rustling, crop damage, land and water use, Farmers and Herders

1. INTRODUCTION

Food security has remained a topical issue in Nigeria. Over the years, agricultural development has been one of the major agendas of successive governments through the introduction of various agricultural development programmes such as Agricultural Development Projects (ADP), River Basin Development Authority, Operation Feed the Nation (OFN), Green Revolution (GR), Family Economic Advancement Programme (FEAP), Family Support Programme (FSP), National Poverty Eradication Programme (NAPEP), National Economic Empowerment and Development Strategy (NEEDS), Millennium Development Goals (MDGs), Sustainability Development Goals (SDGs) among others which have championed the production of Crops, livestock and fishery aimed at providing food and nutrition to the teeming population of the

country. The nation's arable land covers about 74million hectares out of about 98.3million hectares of land area. About 70% of the population of the country is engaged in farming and the agricultural sector has in the past been an important provider of resources for investment in the economy and also a major contributor to the nation's Gross Domestic Product (GDP) [1].

Apart from being a major contributor to the nation's Gross Domestic Product (GDP), it has also been a key sector for job creation, income generation, and major sources of food for the country's teeming population. Despite the agricultural potentials of the country, there is a soaring threat of hunger and poverty. 70% of the population live on less than N100 (US \$ 0.7) per day and Smallholder farmers constitute 80% of all

farm holdings; their production system is inefficient and there is also regular shortfall in national domestic production (Anigbogu, Agbasi & Okoli, 2015).

One major factor contributing to shortfall in national domestic food production is the famers and herders crisis in Nigeria, which arguably could be attributed to cattle grazing, cattle rustling, crop damage by cattle, land and water use, draught and desertification among others. Any or all of these variables could have caused the unending crisis and thus aggravating the effects of farmers-herdsmen land-use conflict on livelihoods of farming households which invariably affects the food security situation in the country. Okoro [2] posits that the struggle for survival and protection of economic livelihood appears to precipitate conflict between herdsmen and farmers across many communities in Nigeria. The conflict has in recent years taken more dangerous dimension with acquisition of modern weapons and communication devices. This has resulted in massive loss of lives and properties. In 2014, groups of heavily armed Fulani herdsmen reportedly killed more than 100 villagers in Kaduna State, 69 villagers in Katsina State, and 37 villagers in Benue State in separate attacks. These large casualty counts per attack remain high, as over 100 people were killed in clashes in Southern Kaduna in one incident alone in early 2017. The violence between herdsmen and farmers has displaced more than 100,000 people in Benue and Enugu States and left them under the care of relatives or in makeshift Internally Displaced Persons (IDPs) camps while many are still struggling to rebuild their lives [3,4]

Conflicts between herdsmen and farmers groups are not limited to Nigeria alone. In fact, herdsmen-farmers conflicts are emerging and disrupting communities in Democratic Republic of Congo, Central African Republic, Mali, and across West Africa region. In West Africa, conflicts between farmers and nomadic cattle herders have been a common feature of economic activities for ages [5, Okoro, 2018]. As cited by Okoro (2018), in Nigeria, however, herder-farmer conflicts have expanded from the North Central (Middle Belt) – where cases of attacks and counter attacks remain endless, to communities in the Northeast, Southeast, Northwest and South-South. Herdsmen-farmer conflicts have the capacity to undermine community relationships across Nigeria. That is because, the conflict has taken a twist where community members now see every Fulani person as an enemy vis a-vis the fact that the conflict has taken more dangerous dimensions with acquisition of modern weapons and communication devices recently.

The southeast Nigeria has been invaded in recent time by the herdsmen which has resulted to massive loss of lives and properties. In April, 2016, the Fulani herdsmen attacked Ukpabi Nimbo in Uzo-Uwani, Enugu state killing 40 defenseless people [6]. In April 25 2016, Ndiagu Attakwu, Akegbe Community in Nkanu-West LGA, Enugu State, herdsmen entered the heart of the community and a woman sounded a gong, after which the cows scattered: the herdsmen gathered the herds and left, only to return in the night and raided the village. 8 persons were murdered, including a catholic church seminarian and a pregnant woman whose stomach was cut open. Also houses were destroyed. In August 25, 2016, in Ndiagu Attakwu Akegbe community in Nkanu West LGA one person killed, a seminarian, and 5 others were also injured. In November 25, 2016 in Nimbo Community of Uzo-Uwani LGA, Enugu state, in a reprisal attack left 8 persons dead (7 men and 1 woman). In March 14, 2018, in Umuobasikwu, Ozuitem community in Bende LGA, Abia State a clash between herdsmen and the people of Umuobasikwu left 1 person dead and several others injured. In March 12, 2018, in Enyanwu Igwe Village in Igbeagu Community, Izzi LGA Ebonyi State, herdsmen attacked villagers for no known reason, 4 persons were killed, economic trees and other properties were destroyed (Okoro, 2018). The Aku Town and Environs in Igbo Etiti Local Government Area of Enugu State is also under the threat and likely attack of the Fulani herdsmen if not put under check [7]. The Ohaji/Egbema community, Owerri Municipal/North/West, Mbaitolu, Ngor-Okpala, Oguta, Aboh Mbaise and Ehime-Mbano all in Imo State have all had terrific experiences of the fulani herdsmen attack (The Fund for Peace, 2014). However, these problems between herders and farmers if not genuinely put on check will aggravate to serious food and economic crises of which Nigeria as a whole is already feeling the impact.

Statement of the Problem

This study was informed by the perceived rising food security challenges in various parts of the country as a result of the farmers and herdsmen clashes. Extant literature is replete with the various assaults and inhuman treatment received by farmers from herdsmen otherwise called the Fulani herdsmen. However, the magnitude and dimensions of the farmers and herdsmen clashes differs in various farming communities. The struggle for survival and protection of economic livelihood (including, farmlands, crops and cattle) appears to precipitate conflict between herdsmen and farmers across many communities in Nigeria coupled with cattle grazing,

cattle rustling, crop damage by cattle, land and water use, draught and desertification.

Cattle grazing-related violence has been on the increase in Nigeria. As posited by Olayoku [8], about 615 violent deaths have been recorded by the database of Nigerian Watch and there have been about 61,314 fatalities that can be described as violent. Another factor contributing to farmers and herders crisis is cattle rustling. This scenario is becoming widespread particularly in the southern part of the country where herders are found in almost all farming communities looking for a means of livelihood and survival for their cattle. Recent developments tend to have implicated cattle rustling in the rising wave of violence in the region as herders accuse the farmers of cattle theft and use that as an excuse for attacking most communities. It has been contended that cattle rustling and banditry has been a veritable threat to public safety and security in Nigeria. It has led to loss of lives, human injury, population displacements, as well as loss of cattle in their numbers. On the part of the farmers, crop damage by cattle has escalated violence between the herders and farmers. This situation has hampered agricultural productivity in Nigeria. The public outcry in most farming communities in southeast Nigeria is that herders take their cattle in farmlands destroying their crops which in most cases are their source of livelihood. When they resist further damage on their crops by herders, they face sudden attacks by the herders. Competition for land and water use between farmers and herders has been the bane of mankind since time immemorial. Indeed competition for land and water use is becoming keener and fiercer, largely due to a number of factors like drought, desertification and increasing human and animal populations. In Nigeria, competition for land and water use has remained the most preponderant resource-use conflict between the farmers-herdsmen [9]. According to Ndubuisi [10] the frequent attacks on the farmers and citizens of Nigeria these days by the herdsmen is terribly alarming. Attesting to this fact, Adetula [11] cited by Ndubuisi (2018), averred that previously the herdsmen were known to wreak havoc in certain communities in southeast Nigeria, but now the rate at which they are committing these crimes has increased exponentially. These threaten the peace, security and unity of the region and will retard growth and development in all spheres of the people's lives. This negative attitude tends to negate their huge economic contribution to the gross national product (GNP). Related studies on farmers and herders crisis in Nigeria are rife with varying insightful findings but most of the studies focused on the dynamics, demographics, causes, socio-religious

and political effects of the clashes on food production. However, limited studies have been carried out on farmer and herders crises and its implication to food security in South East Nigeria. This therefore creates a knowledge and literature gap for the study.

Objectives of the Study

The main objective of this study is to investigate farmers and herders crises in Nigeria: implication to food security in South East Nigeria (2015-2020). Specifically the study intends to:

1. Ascertain the effect of open cattle grazing on food security in South East Nigeria.
2. Examine the effect of cattle rustling on food security in South East Nigeria.
3. Determine the effect of crop damage by cattle on food security in South East Nigeria.
4. Ascertain the effect of land and water use by cattle on food security in South East Nigeria.

Statement of Hypotheses

Hypothesis One

Ho: Open cattle grazing have no significant effect on food security in South East Nigeria.

Ha: Open cattle grazing have significant effect on food security in South East Nigeria.

Hypothesis Two

Ho: Cattle rustling have no significant effect on food security in South East Nigeria.

Ha: Cattle rustling have significant effect on food security in South East Nigeria.

Hypothesis Three

Ho: Damaging of farm products by cattle has no significant effect on food security in South East Nigeria.

Ha: Damage of farm products by cattle has significant effect on food security in South East Nigeria.

Hypothesis Four

Ho: Land and water use by cattle has no significant effect on food security in South East Nigeria.

Ha: Land and water use by cattle has significant effect on food security in South East Nigeria.

2. METHODOLOGY

This chapter aims at providing the procedure for conducting the research. It will be done under the following sub headings: Research Design, Area of the Study, Population of the Study; Sample Size and Sampling Techniques; Sources of Data; Instrument of Data Collection; Method of Data Collection/Administration; Validity of Instrument; Reliability of Instrument, and Analytical Framework and Tools of Analysis.

Research Design

This study is a descriptive survey which aims to examine the farmers and herders crises in Nigeria: implication to food security in South East Nigeria (2015-2020).

Area of the Study

The study will be carried out in South-East Nigeria made up of : Anambra State, Enugu State, Ebonyi State, Abia State and Imo State. The states are significant to this study because of the volume of economic activities carried out in the states and the level of agricultural potentials of the states. Anambra and Abia States play a leading role as a centre for the manufacturing of various kinds of goods, assembly and distribution of motorcycles and spare-parts in Nigeria and as such other economic activities take place in the states. The states host the largest markets in West Africa. Ebonyi State serves a food basket of the region with a very great agricultural potential. The State has a lot of solid minerals that have attracted a lot of small businesses and establishments in the area. Enugu State and Imo State are significant to this study because they are centres for hospitality industries in South-East Nigeria. They are one of the economic hubs of the region where economic and business activities take place. The states have very great agricultural potential. The states are located within the tropical humid climate characterized by wet and dry seasons. The average annual rainfall ranges between 1200mm and 1800mm and the temperature ranges between 20^oc and 36^oc. The states has a large arable and fertile land which support the cultivation of cash and food crops such as Maize, Rice, Yam, Plantain, Cassava, Cocoyam, Cocoa, Palm and kola nut.

Population of the Study

The population of the study consist of Members of selected farmers cooperative societies in affected communities in southeast Nigeria. South-East has a total of 6698 registered active members of cooperative societies in affected communities in southeast Nigeria.

Table 1: Distribution of firms by Population and Sample

States	Population
Anambra State	1957
Abia	1351
Enugu State	1327
Imo State	1149
Ebonyi State	914
Total	6698

Source: Researchers Computation

Sampling and Sampling Size

To determine the sample size, for the purpose of questionnaire distribution; the Taro Tamani (1967) formula was used. The formular is stated thus:

$$n = \frac{N}{1+N(e)^2}$$

Where: n=sample size

N= population

e= Margin of error (5% or 0.05)

1= Constant

Substituting in the above formula:

$$\begin{aligned} n &= \frac{6698}{1+6698(0.05)^2} \\ &= \frac{6698}{1+6698(0.0025)} \\ &= \frac{6698}{7.745} \\ &= 384.35 \\ &= 384 \end{aligned}$$

For the purpose of allocation of sample stratum, the researcher adopted R. Kumaison's formula. Below is the R. Kumaisons formula for sample size distribution:

$$nh = \frac{nNh}{N}$$

Where n=Total sample size

Nh= The number of items in each stratum in the population

N= Population size

nh= The number of units allocated to each stratum

n= 384

Table 2: Distribution of firms by Population and Sample

States	Population	Sample
Anambra State	1957	115
Abia	1351	81
Enugu State	1327	68
Imo State	1149	69
Ebonyi State	914	51
Total	6698	384

Source: Researchers Computation

Source of Data

The study explored both primary and secondary data for the study. However, the researcher relied more on primary data which were gathered through the use of a structured questionnaire that were administered to the respondents in the study areas. The information obtained relate to farmers and farmers and herders

crises in Nigeria: implication to food security in South East Nigeria.

Instruments for Data Collection

Data were collected through structured questionnaire. The questionnaire has both open ended and closed ended questions. Appropriate forms of questions were explored depending on the information needed to be sought, the sampled respondents and the kind of analysis intended. The questions were simple and logical. The questions focused on collecting information relating to farmers and herders crises in Nigeria: implication to food security in South East Nigeria. Also such socio-economic characteristics of the farmer/respondents were obtained. The researcher used both primary and secondary sources of data. The researcher gathered primary data through a structured questionnaire designed by the researcher while the secondary data were obtained from already existing literature and internet material. The questionnaire were administered through research assistants co-opted by the researcher for this purpose. These were administered to the respondents of selected societies at the venue of their meeting. They were completed on the spot and returned immediately as soon as the respondents complete the questionnaire. Out of total 384 questionnaire distributed, only 348 were fully completed and returned.

Method of Data Analysis

Data collected were analyzed using descriptive statistics (frequencies, percentages, mean, and standard deviation) independent t-test statistics and the linear regression model. The demographic profile was processed using descriptive statistics, hypotheses were processed using t-test statistics and the regression model. All the analysis were done using SPSS version 23. Linear regression model of the ordinary least square (OLS) approach was used to analyse the objectives in order to ascertain the farmer and herders crises in Nigeria: implication to food security in South East Nigeria. The use of (OLS) is informed by the fact that under normality assumption for e_i , the OLS estimator is normally distributed and are said to be best, unbiased linear estimator. Gujarati [12]

The model is implicitly specified as follows;

$$Y = f(x_1, x_2, x_3, \dots, x_n + e_i) \dots \dots \dots \text{eq}(1)$$

The model is explicitly specified as follows;

$$Y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + e_i \dots \dots \dots \text{eq}(2)$$

Where:

α = intercept

Y = Food security in South East Nigeria (weighted mean).

$\beta_1 - \beta_4$ = Regression coefficient

e_i = Error term designed to capture the effects of unspecified variables in the model

X_1 = Open cattle grazing (weighed mean)

X_2 = Cattle rustling (weighed mean)

X_3 = Crop damage (weighed mean)

X_4 = Land/ water use and desertification (weighed mean)

α = Constant term

The α and β_s are the parameters for estimation and these are the error terms.

The regression analysis was run using SPSS package so as to determine the order of importance of the explanatory variables in explaining the variation observed in the dependent variables. The t-test was performed to test the significance of each of the explanatory variables at the alpha levels of 5%.

3. DATA PRESENTATION AND ANALYSIS

This chapter deals with the presentation and analysis of data collected from the field of study. The aim is to present the data in an interpretable form so that the variables of the study can be well understood.

Demographic Profile of the Respondents

Table 3: Distribution of Respondents According to Gender

Variable	Frequency	Percent (%)	Cumulative (%)
Male	246	70.7	70.7
Female	102	29.3	100
Total	348	100	

Source: Field Survey, 2021

Table 3 shows that Three hundred and forty-six of the respondents representing 99.4% respondents are males while Two of the respondents representing 0.6% of the respondents are females.

Table 4: Distribution of Respondents According to Age

Variable	Frequency	Percent (%)	Cumulative (%)
18-32	4	1.1	1.1
31-40	46	13.2	14.3
41-50	152	43.7	58.0
51-60	88	25.3	83.3
61-70	58	16.7	100.0
Total	348	100.0	

Source: Field Survey, 2021

As shown in table 4, four respondents, representing 1.1% of the respondents are between the ages of 18-32. forty-six respondents, representing 13.2% of the respondents, are between the ages of 31-40. One

hundred and fifty-two respondents, representing 43.7% of the respondents, are between the ages of 41-50. Eighty-eight respondents, account for 25.3% of

the respondents, between the ages of 51-60, while fifty-eight respondents account for 16.7% of the respondents, are between the ages of 61-70.

Table 5: Distribution of Respondents According to Educational Qualification

Variable	Frequency	Percent (%)	Cumulative (%)
Primary	11	3.2	3.2
Secondary	289	83.0	86.2
Tertiary	48	13.8	100.0
Total	348	100.0	

Source: Field Survey, 2021

From table 5, all the respondents had formal education. Eleven respondents representing 3.2% of the respondents had primary education. Two hundred and eighty-nine respondents representing 83.0% had secondary education while forty-eight respondents representing 13.8% had tertiary education.

Table 6: Distribution of Respondents According to Years of farming Experience

Variable	Frequency	Percent (%)	Cumulative (%)
1-5	81	23.3	23.3
6-10	185	53.2	76.5
11-15	78	22.4	98.9
15-30	4	1.1	100.0
Total	348	100.0	

Source: Field Survey, 2021

With respect to business farming experience, table 6 reveals that Eighty-one respondents representing 23.3% of the respondents had 1-5years farming experience. One hundred and eighty-five respondents representing 53.2% of the respondents had 6-10years farming experience. Seventy-eight respondents representing 22.4% of the respondents had 11-15years farming experience, while Four respondents representing 1.1% of the respondents had 15-30years farming experience.

Table 7: Distribution of Respondents According to Marital Status

Variable	Frequency	Percent (%)	Cumulative (%)
Married	296	85.1	85.1
Single	47	13.5	98.6
Widow/Widower	5	1.4	100.0
Total	348	100.0	

Source: Field Survey, 2021

From table 7, Two hundred and ninety-six respondents representing 85.1% of the respondents are married. Forty-seven respondents representing 13.5% of the respondents are single, while Five respondents representing 1.4% of the respondents are widow/widower.

Regression Analysis Result

Table 8: Regression Result on farmers and herders crises in Nigeria: implication to food security in South East Nigeria

Model	B	Std. error	T	Sig.
Constant(C)	0.175	0.020	8.579	0.000
Open cattle grazing	-0.416	0.026	-15.749	0.000
Cattle rustling	-0.319	0.029	-11.143	0.025
Damaging of farm products by cattle	-0.394	0.054	-7.254	0.000
Land and water use by cattle	-0.355	0.121	-2.931	0.004
R	0.929			
R²	0.863			
Adj. R²	0.860			
F-statistic	331.601			0.000

Source: Field Survey, 2021

Dependent Variable: Farmers Output

To examine farmers and herders crises in Nigeria: implication to food security in South East Nigeria, the weighted mean of the four independent variables were regressed on the dependent variable to enable us determine the nature of relationship between the dependent and independent variables, effect of the four independent variables on the dependent variable, the overall fitness of the model using the F-statistics and probability value and the level of significance of the independent variables in influencing the dependent variables using the t-test and probability value. The table above shows the regression result. it also shows the precision of the model which was analyzed using economic a priori criteria and statistical criteria.

Discussion of Findings

Discussion based on economic a priori criteria

Discussion using this criterion enables us to determine the nature of relationship between the dependent and independent variables. In this case, the sign and magnitude of each variable coefficient are evaluated against theoretical or economic a priori criteria/expectations. As showed in the table 8, it is observed that the regression line has a positive intercept as presented by the constant (c) = 0.175. This means that if all the variables are held constant or fixed (zero), the success of private labels in the motorcycle industry increases by 17.5%. The result also conforms to the a priori expectation. This states that the intercept could be positive or negative, so it conforms to the theoretical expectation (Gujarati, 2008).

Open cattle grazing has an inverse relationship with food security in South East Nigeria. This implies that the Open cattle grazing and food security in South East Nigeria move in opposite direction. That is to say that Open cattle grazing has a negative relationship with food security in South East Nigeria. In other words, 1% increase in open cattle grazing will bring about 41.6% reduction in food security in South East Nigeria.

Cattle rustling has an inverse relationship with food security in South East Nigeria. In other words, 1% increase in Cattle rustling will bring about 31.9% reduction in food security in South East Nigeria.

Damaging of farm products has a negative positive relationship with food security in South East Nigeria. As the farm products are damaged by cattle, it reduces food security in South East Nigeria. In other words, 1% increase in farm products are damaged by cattle will bring about 39.4% reduction in food security in South East Nigeria.

Land and water use by cattle also have an inverse relationship with food security in South East Nigeria. Therefore, 1% increase in either of them, will bring about 35.5% reduction in food security in South East Nigeria.

Discussion based on statistical criteria

In order to evaluate the farmers and herders crises in Nigeria: implication to food security in South East Nigeria, the analysis was also done based on statistical criteria by applying the coefficient of determination (R^2) and the F-test. In general, the joint effect of the explanatory variables-independent variables-in the model account for 0.860 or 86.0% of the variations in the food security in southeast Nigeria. This implies that 86.0% of the variations in the food security in the region are being accounted for or explained by the variations in Open cattle grazing, Cattle rustling, Damaging of farm products by cattle and Land and water use by cattle. While other independent variables not captured in the model explain just 14% of the variations in food security in the region.

All the four coefficients (Open cattle grazing, Cattle rustling, Damaging of farm products by cattle and Land and water use by cattle) are have significant effect on food security in Southeast Nigeria.

Test of Hypotheses

The t-test is used to know the statistical significance of the individual parameters at 5% significance level. The result is showed on table 9 below.

Table 9: Summary of t-statistic

Variables	t-cal (t_{cal})	Sig.	Conclusion
Constant(C)	8.579	0.000	Statistically Significance
Open cattle grazing	-15.749	0.000	Statistically Significance
Cattle rustling	-11.143	0.025	Statistically Significance
Damaging of farm products by cattle	-7.254	0.000	Statistically Significance
Land and water use by cattle	-2.931	0.004	Statistically Significance
F-statistic	331.601	0.000	Statistically Significance

Source: Researchers computation

We begin by bringing our working hypothesis to focus in considering the individual hypothesis. From table 9, the t-test result is interpreted below:

Hypothesis One

H₀₁:Open cattle grazing have no significant effect on food security in South East Nigeria.

H_{a1}:Open cattle grazing have significant effect on food security in South East Nigeria.

From table 9, the t-test value of Open cattle grazing, is significant. We, therefore reject the null hypothesis and conclude that open cattle grazing have significant effect on food security in South East Nigeria.

Hypothesis Two

H₀₂:Cattle rustling have no significant effect on food security in South East Nigeria.

H_{a2}:Cattle rustling have significant effect on food security in South East Nigeria.

From table 9, the t-test value of cattle rustling is significant at 0.000 level of significant. We, therefore, reject the null hypothesis and accept the alternate by concluding that cattle rustling have significant effect on food security in South East Nigeria.

Hypothesis Three

H₀₃:Damaging of farm products by cattle has no significant effect on food security in South East Nigeria.

H_{a3}:Damage of farm products by cattle has significant effect on food security in South East Nigeria.

From table 9, the t-test value of Damaging of farm products by cattle, is significant at 0.047 level of significant. We, therefore, reject the null hypothesis and accept the alternate by concluding that damage of farm products by cattle has significant effect on food security in South East Nigeria.

Hypothesis Four

H₀₄:Land and water use by cattle has no significant effect on food security in South East Nigeria.

H_{a4}:Land and water use by cattle has significant effect on food security in South East Nigeria.

From table 9, the t-test value of land and water use by cattle, is significant. We, therefore, reject the null hypothesis and conclude that Land and water use by cattle has significant effect on food security in South East Nigeria.

4. SUMMARY OF FINDINGS

1. Open cattle grazing have significant effect on food security in South East Nigeria, but it has an inverse relationship with food security in South East Nigeria which implies that the Open cattle

grazing and food security in South East Nigeria move in opposite direction.

2. Cattle rustling have significant effect on food security in South East Nigeria and it has an inverse relationship with food security in South East Nigeria.
3. Damage of farm products by cattle has significant effect on food security in South East Nigeria and it has a negative positive relationship with food security in South East Nigeria.
4. Land and water use by cattle has significant effect on food security in South East Nigeria and it also have an inverse relationship with food security in South East Nigeria.

Conclusion

In the final analysis, this study has investigated farmers and herders crises in Nigeria: implication to food security in South East Nigeria (2015-2020). Specifically the study ascertained the effect of open cattle grazing on food security in South East Nigeria. Examined the effect of cattle rustling on food security in South East Nigeria. Determined the effect of crop damage by cattle on food security in South East Nigeria and ascertained the effect of land and water use by cattle on food security in South East Nigeria. The study found that open cattle grazing has an inverse relationship with food security in South East Nigeria. This implies that the Open cattle grazing and food security in South East Nigeria move in opposite direction. That is to say that Open cattle grazing has a negative relationship with food security in South East Nigeria. In other words, 1% increase in open cattle grazing will bring about 41.6% reduction in food security in South East Nigeria. Cattle rustling has an inverse relationship with food security in South East Nigeria. In other words, 1% increase in Cattle rustling will bring about 31.9% reduction in food security in South East Nigeria. Damaging of farm products has a negative positive relationship with food security in South East Nigeria. As the farm products are damaged by cattle, it reduces food security in South East Nigeria. In other words, 1% increase in farm products are damaged by cattle will bring about 39.4% reduction in food security in South East Nigeria. Land and water use by cattle also have an inverse relationship with food security in South East Nigeria. Therefore, 1% increase in either of them, will bring about 35.5% reduction in food security in South East Nigeria.

5. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. The government should introduce cattle ranching as a way of discouraging cattle rearing in the region.
2. Open grazing should be discouraged by the government. This will help reduce the rate crop destruction in the country.
3. The government should come up effective ban on open grazing to put a lasting solution to farmer and herders crisis in the country.
4. The government should insure rural farmers to protect them from credit affecting their ability to repay their loan after their crops have been damaged by such hazards.

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